TECHNICAL REVIEW COMMENTS

PRE-DESIGN INVESTIGATION WORK PLAN
NORTH BRONSON FORMER FACILITIES SITE
FORMER SCOTT FETZER FACILITY – OPERABLE UNIT 3
BRONSON, MICHIGAN

Prepared for
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604

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ACRONYMS AND ABBREVIATIONS

AS/SVE	Air Sparge/Soil Vapor Extraction
bgs	Below ground surface
EPA	U.S. Environmental Protection Agency
Haley & Aldrich	Haley and Aldrich of Michigan, Inc.
HASP	Health and Safety Plan
MDEQ	Michigan Department of Environmental Quality
NBFF	North Bronson Former Facility
OU	Operable Unit
PID	Photoionization detector
PRGs	Preliminary Remediation Goals
QAPP	Quality Assurance Project Plan
RI	Remedial Investigation
RGs	Remediation Goals
ROD	Record of Decision
RPM	Remedial Project Manager
Scott Fetzer	Former Scott Fetzer Facility
SOPs	Standard Operating Procedures
SOW	Statement of Work
TCE	Trichloroethylene
VOCs	Volatile Organic Compounds
WA	Work Assignment
Work Plan	Pre-Design Investigation Work Plan
XRF	X-ray fluorescence

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At the request of the U.S. Environmental Protection Agency (EPA), SulTRAC conducted a technical review of the Haley & Aldrich of Michigan, Inc. (Haley & Aldrich) document, "*Pre-Design Investigation Work Plan, North Bronson Former Facilities, Former Scott Fetzer Facility, Operable Unit- 3, Bronson, Michigan,*" dated July 7, 2017. The North Bronson Former Facilities (NBFF) is also known as the North Bronson Industrial Subareas under the National Priority List Parent Site, North Industrial Area (EPA ID MIN000508192). Haley & Aldrich submitted this document on behalf of Scott Fetzer Company, Inc.

The purpose of this technical review is to provide general and specific technical comments on the Pre-Design Investigation Work Plan (Work Plan) to assist EPA in determining if the document complies with the Record of Decision (ROD) issued September 2009, and the Administrative Order (AO) for Remedial Design and Remedial Action Statement of Work (SOW) issued June 2013; both the ROD and AO/SOW were approved by EPA with concurrence from Michigan Department of Environmental Quality (MDEQ).

EPA's Remedial Project Manager (RPM) requested SulTRAC review of the Work Plan text and Appendix A (Field Standard Operating Procedures [SOPs]) in an email dated January 10, 2018. The RPM stated that Appendices B (Quality Assurance Project Plan [QAPP]) and C (Site-Specific Health and Safety Plan [HASP]) would be reviewed internally by EPA and that review by SulTRAC was not required. SulTRAC submitted review comments on an earlier draft version of the Work Plan (Haley & Aldrich 2017) on July 12, 2017 (SulTRAC 2017). General comments are provided below, followed by specific comments. Comments have been updated to reflect the July version of the Work Plan.

General Comments

1. The Work Plan indicates that a discussion of the regional and Site geology and hydrogeology and Site investigations is included in the Remedial Investigation Report (Haley & Aldrich, 2008). However, the document should include sufficient background information (e.g. groundwater flow direction, RI result descriptions, data gaps, etc.) to provide a basis for the proposed sample locations and the anticipated data to improve the site conceptual model.
2. Appendices A, B, and C were omitted from the draft Work Plan (Haley & Aldrich 2017). These Appendices were included in the July 7, 2017 Work Plan, and this appears to be the primary change from the earlier version (i.e. the text within the plan appears unchanged).
3. A summary report is discussed in Section 3.0, however the potential for supplemental investigation was mentioned in Sections 2.1, 2.2.2, and 2.4. As such, detail regarding communication with EPA and MDEQ, decision-making on supplemental activity, schedule impacts, and reporting needs to be included in the Work Plan.

4. A schedule detailing the order and timing of proposed sampling activities, and procedures for notifying EPA and MDEQ of any adjustment to the schedule, should be included in accordance with the ROD and AO/SOW.

5. SOP #1.3, Utility Clearance, states that "*In the case of the Former Scott Fetzer property, historical drawings that indicate locations of underground utilities at the former facility have not been located. Therefore, a great deal of care must be exercised during all subsurface investigation activities*" on page 4 of 5. As a schedule or discussion of the order of proposed site activities was not provided, it is unclear when the proposed subsurface geophysical survey will be conducted. It may be beneficial to conduct the geophysical survey prior to advancing any borings to scan all proposed boring locations for the presence of potential underground utilities (in addition to the proposed industrial sewer locations). If the locations of any borings are modified due to suspected presence of underground utilities or other obstructions, or if additional soil and/or groundwater sample points will be added to characterize potential impacts from industrial sewer segments, EPA and MDEQ should be notified of and approve such modifications prior to advancing borings.

Specific Comments

1. Section 1. Introduction

   a. Second paragraph: *"This PDI WP was prepared pursuant to (…), and a May 9, 2017 USEPA request to collect additional soil and groundwater data to support development of the Remedial Design Work Plan."*

      On May 9, 2017, EPA's RPM approved a request initiated by Haley & Aldrich to conduct a Pre-Design Investigation, contingent upon approval of a Work Plan and other deliverables. The text as written indicates that EPA requested the additional investigation. Modification to clarify the initiation of this document is recommended.

2. Section 2.1 Soil Matrix Sampling

   a. Fourth Paragraph: *"The soil samples will be placed in laboratory-provided containers, labeled, stored in a cooler with wet ice and associated trip blanks, secured with custody seals, and transported under standard chain of custody documentation to Test America for analysis of VOCs using EPA Method 5035/8260C. For stepout sampling associated with location VZP014 in the Former Annex/CDF, soil samples will be placed in laboratory-provided glass jars for analysis of cadmium using EPA Method 6020."*

      i. The Work Plan and QAPP indicate that the only metal to be analyzed is cadmium via EPA Method 6020A. Figure 4 reports the analytical results of additional metals (aluminum, antimony, arsenic, etc.). Although these other metals have not been identified on Table 9 of the ROD above the Groundwater Surface water Interface Protection Criteria (U.S. EPA 2009), EPA Method 6020A has been determined by EPA to be appropriate for the analysis of aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc (EPA 1998). Therefore,

these analytical results should be reported in addition to cadmium for consistency with previous data collected during the Remedial Investigation (Haley & Aldrich 2008).

ii. According to Figure 4, trichloroethylene (TCE) was detected in an estimated concentration of 68,000 mg/kg at VZP014 (0-4 feet bgs) in September 2003. Location VAP011, adjacent to VZP014, had TCE was also detected at estimated concentrations of 27,000 mg/kg at VAP011 (2-4 feet bgs), 4,800 mg/kg at 6-8 feet bgs, and 4,800 mg/kg at 8-9 feet bgs in September 2004. The Work Plan text and Figures 4 and 5 indicate soil samples collected at proposed "stepout" sampling locations near VZP014 and VAP011 will be submitted for cadmium analysis. Due to elevated historical TCE concentrations at VZP014 and VAP011, SulTRAC recommends that samples at these proposed locations also be submitted for VOC analysis using EPA Method 5035/8260C.

b. Fifth Paragraph: "*Soil sampling locations will be completed during subsequent mobilizations if the extents of soil impacts above RGs have not been reached during the initial round of sampling.*

If additional sampling will be conducted in a subsequent mobilization, Haley & Aldrich should, at minimum, submit the additional sampling program to EPA, with a copy to MDEQ, for approval prior to conducting the additional sampling.

3. Section 2.2.2 Site Conceptual Model Update

a. SulTRAC recommends renaming Section 2.2.2 to "Vertical Aquifer Screening" to reflect the sampling activity discussed in this section.

b. Fifth Paragraph: "*After inserting the polyethylene tubing inside the peristaltic pump, the pump tubing will be slowly lowered to a depth corresponding to the mid-point of the four-foot mill slot screen. Prior to collecting a groundwater sample, three screen volumes will be purged. Following screen purging, the pumping rate will be set at less than 100 mL/min and the groundwater within the pump tubing will be purged. Upon completion of purging the tubing, groundwater will be directed into appropriate sample containers.*"

Flow-rate during purging is not specified. Typically, flow rates of 0.1 to 0.5 L/min are used for low-flow purging and sampling in developed monitoring wells (EPA 1996). A low-flow rate of <0.5 L/min is recommended during purging to maintain minimal drawdown (EPA 1996) and should be specified in the Work Plan and/or SOP 6.2 (Groundwater Sample Collection for Laboratory Analysis).

Mill slot screen purging procedures indicate that three well volumes will be purged. SOP#6.2 indicates that water quality indicator parameters will be measured using an in-line flow-through cell prior to sampling. The water quality indicators should be measured and recorded every three to five minutes during purging (or alternately when a minimum of one tubing volume [including pump and flow-through cell volumes] has been purged) to verify that stabilization has been achieved (as described in the permanent monitoring wells section of SOP #6.2). If stabilization is not achieved after purging three screen volumes, additional purging should be performed until stabilization is achieved or a minimum of five screen volumes are purged.

c. Sixth Paragraph: *"Groundwater sampling locations will be completed during subsequent mobilizations if the extents of groundwater impacts above PRGs have not been reached during the initial round of sampling."*

If additional sampling will be conducted in a subsequent mobilization, Haley & Aldrich should, at minimum, submit the additional sampling program to EPA, with a copy to MDEQ, for approval prior to conducting the additional sampling.

4. Section 2.3 Groundwater Sampling of Permanent Monitoring Wells

a. First Paragraph: *"...water levels will be measured and groundwater samples will be collected from the NBFF OU3 monitoring network consisting of SFMW-01S, SFMW-02S, SFMW-03S, SFMW-03I, SFMW-03D, SFMW-04S, SFMW-04I, SFMW-04D, SFMW-05S, SFMW-05I, SFMW-05D, SFMW-06S, SFMW-06I, SFMW-06D, and MW-19."*

Of note, monitoring well MW-20 (shown on Figure 8) is not included in the proposed monitoring well network for this Work Plan. MW-20 is listed as damaged, and is apparently still present at the site. Therefore, because MW-20 is unlikely to be of use to site investigative activity in the future, it should be properly abandoned. Abandonment of MW-20 should be considered during this or a future mobilization. SFMW04-S/I/D, located near MW-20, may constitute a comparable/suitable monitoring point to replace MW-20.

5. Section 2.4 Industrial Sewer Segments Investigation

a. Second Paragraph: *"Based on the geophysical results, if not already addressed by historical or proposed PDI sample locations, additional soil and/or groundwater sample points will be advanced to characterize the potential soil and/or groundwater impacts from these Industrial Sewer segments."*

The rationale of selecting ground penetrating radar as the geophysical method should be discussed, including suitability for use at the Site (e.g. soil type, soil moisture, etc.). The methods and target depth of the proposed geophysical survey should be detailed. Figure 9 apparently shows areas where industrial sewers may have been located; information regarding survey areas (grids) should be included. A report on geophysical activity be submitted should be completed by the subcontractor and included as an attachment to PDI report.

EPA and MDEQ should be informed of the number and locations of proposed additional sampling points, if deemed necessary based on the geophysical results. The modified schedule including the additional sampling activity should be provided in accordance with the ROD and AO/SOW.

6. Section 2.5 Other Data Collection

a. First Paragraph: *"Existing data indicates naturally occurring reductive dechlorination is occurring at the Site. This phenomenon will be further evaluated during the PDI to determine the potential for additional degradation of TCE during interim groundwater remediation."*

The remedy selected for OU3 includes limited soil excavation, air sparging/soil vapor extraction (AS/SVE) of VOCs in contaminated soils, and an interim remedy of air sparging and groundwater pump and treat for groundwater (EPA 2009). The proposed investigation of

biological reductive dechlorination is not required by the ROD. Additionally, the short-term effectiveness of biological reductive dechlorination on the concentrations of VOCs in groundwater is anticipated to be much less than the air sparging and groundwater pump and treat systems selected as the remedy. Although the collection of the additional data discussed in Section 2.5 may be of limited benefit, SulTRAC does not believe there will be any harm in collection of the data.

7. Section 2.7 NBFF OU2 SVE/AS Data Review

   a. First Paragraph: *"Prior to shut down in early 2017, the former LA Darling Site (NBFF OU2, located west of Matteson Street) completed an SVE/AS program that operated for approximately three years. Scott Fetzer will attempt to obtain and review the NBFF OU2 design and operational data as part of the PDI."*

   While SulTRAC agrees that review of the design and operational data from the AS/SVE system implemented at OU2 may be beneficial to the remedial design for OU 3, the system eventually utilized at OU3 will need to be designed specific to the subsurface geologic and hydrogeologic conditions at OU3.

Figure 1. NBFF OU3 is not designated as the Former Scott Fetzer Site. The legend should include descriptions of NBFF OU1, NBFF OU2, and NBFF OU3.

Figure 2. Outlines of historical site features are shown; these features should also be labelled.

Figure 6. Figure 6 contains two concentration maps; TCE concentration in soil gas and TCE concentration in groundwater. SulTRAC recommends splitting these into separate figures. The predominant groundwater flow direction should be added to the TCE concentration in groundwater map. Also, the source of the data used for the map should be cited in the legend.

Figure 7. The figure title should indicate if these are the vertical aquifer screening locations. SulTRAC recommends creating a separate figure for geochemistry/geochemistry plus microbiology sampling to avoid confusion. Groundwater flow direction should be included.

Appendix A

General Comments

A cover sheet or Table of Contents for Appendix A should be generated which lists all SOPs included in this appendix.

Specific Comments

1) SOP #1.3 Utility Clearance

   a) Procedure, 3rd Bullet on Page 3 of 5: "*Call the designated "One-Call" underground facilities protection organization for the area. In Michigan, MISS-DIG is the "One-Call" service. MISS-DIG can be contacted by telephone 1.800.482.7171 or information can be submitted by facsimile at 1.248.874.3410.*"

The MISS DIG website (www.missdig.org) does not list facsimile as a submittal option. Phone numbers 811 and 1.800.482.7171, the online e-Locate program for single addresses, or the Remote Ticket Entry Program are listed as appropriate utility notification contact methods.

b) Procedure, 1st Bullet on Page 5 of 5: "*Hand digging, augering, or probing to expose or reveal shallow utilities and confirm presence and location. In northern climates this may require advancing to the frost line, typically at least four feet.*"

Historical drawings indicating the presence of underground utilities at the former facility have not been located, and therefore hand digging, augering, and/or probing activities may be necessary. Soil samples will be collected for analysis of VOCs, and soil disturbance must be minimized to obtain representative VOC samples. Accordingly, VOC soil samples should be collected manually via usage of a hand-auger or other appropriate method to minimize sample disturbance from any soil intervals in which hand-digging is necessary. Sample collection should be completed prior to hand-digging. SOP #2.3 references manual methods such as hand-augers, but does not include details of hand-auger installation and sampling procedures. If manual methods are to be performed, proper procedures should be detailed in this SOP. Alternately, a geophysical survey may be sufficient to evaluate the presence of potential subsurface utilities at the boring locations, although additional details on the methods, suitability, and target depth of the proposed geophysical survey is needed as discussed above.

c) Procedure, 3rd Bullet on Page 5 of 5. *"(…) The National Utility Locate Contractors Association (NULCA) can be reached at 715-635-6004*."

A different contact number (888-685-2246) is posted on the website (https://www.nulca.org).

2) SOP #1.4 Field Data Recording – Daily Field Reports, Log Forms and Electronic Data

a) Written Field Data: "*Written field data will be recorded on a Daily Field Report (DFR) or field forms... DFRs have the benefit of prompting field personnel to make appropriate observations and record data in a standardized format.*"

No DFRs or field forms have been included within the Work Plan or SOPs. All field forms and DFRs should be included within the Appendices of the Work Plan.

Additionally, any notes needed in addition to the standard field forms/DFRs should be recorded in a bound field log book and stored in the project file upon completion of field activity.

b) Written Field Data, Guideline #11: "*Upon entry into electronic files, original DFRs will be destroyed.*"

Original DFRs should be stored in the project files in lieu of being destroyed.

3) SOP #2.3 Soil Borings

a) A SOP for Sonic Drilling is referenced as both 3.4 and 3.5. SOP 6.5 is referenced as "Soil and Sediment Sampling Procedures", however the SOP included in this Work Plan is "Soil Sampling Procedures." Revise SOP numbers and titles for consistency within the Work Plan.

REFERENCES

Haley & Aldrich. 2008. Remedial Investigation Report, North Bronson Former Facilities Sites, Former Scott Fetzer Facility – Operable Unit #3, Bronson, Michigan. Revision 2. February 20.

Haley & Aldrich. 2017. Draft Pre-Design Investigation Work Plan, North Bronson Former Facilities Site, Former Scott Fetzer Facility – Operable Unit #3, Bronson, Michigan. June 16.

SulTRAC. 2017. Technical Review Comments, Draft Pre-Design Investigation Work Plan, North Bronson Former Facilities Site, Former Scott Fetzer Facility – Operable Unit #3, Bronson, Michigan. July 12.

U.S. EPA. 1996. Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures. EPA/540/S-95/504. April.

U.S. EPA. 1998. Method 6020A, Inductively Coupled Plasma – Mass Spectrometry, Revision 1. January.

U.S. EPA. 2009. Record of Decision. North Bronson Former Facilities Site. Fetzer Site Operable Unit 3. Bronson, Michigan. September 2009

U.S. EPA. 2013. Statement of Work for the Remedial Design and Remedial Action at the Former Fetzer Facility Operable Unit 3 of the North Bronson Former Facilities Site. Bronson, Branch County, Michigan